



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Steven A. Kunsman et al.  
Assignee: ABB Inc.  
Serial No.: 10/770,270 Art Unit: 2125  
Filed: February 2, 2004 Confirmation No.: 9598  
Title: HIGH IMPEDANCE FAULT DETECTION  
Attorney Docket No.: E20000120

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Enclosed herewith is an Information Disclosure Statement (IDS) for the subject application. A fee of \$180.00 for the supplemental IDS is required since the IDS is being filed after a first Office Action.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 050877.

Respectfully submitted,

ABB Inc.

By:   
Paul R. Katterle, Reg. No. 36563

11/29/2005 SFELEKE1 00000001 050877 10770270  
01 FC:1806 180.00 DA

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on the date indicated below.

  
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Substitute for form 1449/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

5

**Complete if Known**

Application Number	10/770,270
Filing Date	February 2, 2004
First Named Inventor	Steven A. Kunsman
Art Unit	2125
Examiner Name	Paul L. Rodriguez
Attorney Docket Number	E20000120

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Number-Kind Code <sup>2</sup> (if known)					
		US- 4,466,071	08-14-1984	Russell, Jr. et al.	
		US- 4,871,971	10-03-1989	Jerrings et al.	
		US- 5,475,556	12-12-1995	Yoon et al.	
		US- 5,512,832	04-30-1996	Russell et al.	
		US- 5,602,709	02-11-1997	Al-Dabbagh	
		US- 5,724,247	03-03-1998	Dalstein	
		US- 4,297,738	10-27-1981	Lee	
US-					

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)						

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				First Named Inventor	Steven A. Kunsman
				Art Unit	2125
				Examiner Name	Paul L. Rodriguez
Sheet	2	of	5	Attorney Docket Number	E20000120

<b>NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
		BUCHHOLZ et al; High Impedance Fault Detection Device Tester; Journal IEEE Transactions on Power Delivery, Vol. 11, No. 1, January 1996, Powertech Labs Inc., Surrey, B.C. Canada V3W 7R7			T <sup>2</sup>
		RUSSELL et al; Arcing Fault Detection for Distribution Feeders: Security..., Journal IEEE Transactions on Power Delivery, Vol. 10, No. 2, April 1995; Power System Automation Lab, Texas			
		EBRON et al; A Neural Network Approach To The Detection of Incipient Faults on Power Distribution Feeders; IEEE Transactions on Power Delivery, Vol. 5, No. 2, April 1990; Electric Power			
		Research Center, Raleigh, NC			
		RUSSELL et al; An Arcing Fault Detection Technique Using Low Frequency Current Components - Performance Evaluation Using Recorded Field Data; Journal IEEE Transactions on Power Delivery			
		Vol. 3, No. 4, October 1988; Texas A&M University, College Station, Texas			
		BENNER et al; Practical High Impedance Fault Detection for Distribution Feeders; IEEE Transactions on Power Delivery, Vol. 33, No. 3, pp.635-640, May/June 1997; Power System Automation			
		Laboratory, College Station, Texas			
		LAZKANO et al; A New Approach To High Impedance Fault Detection Using Wavelet Packet Analysis; Proceedings of Ninth International Conference on Harmonics & Quality of Power,			
		Vol. 3, pp. 1005-1010, 2000;			

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				Art Unit	2125
				Examiner Name	Paul L. Rodriguez
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**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		RUSSELL et al; Performance of high-impedance fault detection algorithms in long-term field trials; Elsevier Science S.A. Power System Automation Laboratory, College Station, TX 77843	
		C.J. KIM et al; Classification of Faults and Switching Events by Inductive Reasoning and Expert System Methodology; Journal IEEE Transactions on Power Delivery, Vol. 4, No. 3, July 1989;	
		Texas A&M University; College Station, Texas 77843	
		A.M. SHARAF et al; A Third Harmonic Sequence Ann Based Detection Scheme For High Impedance Faults; Canadian Conference on Electrical and Computer Engineering; University of New Brunswick,	
		Canada	
		J.T. Tengdin et al; Application of High Impedance Fault Detectors; A Summary of the Panel Session Held at the 1995 IEEE PES Summer Meeting	
		M. AL-DABBAGH et al; Neural Networks Based Algorithm For Detecting High Impedance Faults on Power Distribution Lines; 1999 IEEE; Department of Electrical and Communication Engineering;	
		Papua, New Guinea	
		L.A. SNIDER et al; The Artificial Neural Networks Based Relay Algorithm For Distribution System High Impedance Fault Detection; Journal from Proceedings of the 4th International	
		Conference on Advances in Power System Control, Operation and Management, APSCOM-97, Hong Kong, November 1997.	

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E20000120					

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		R. PATTERSON et al; A Microprocessor-based Digital Feeder Monitor with High-Impedance Fault Detection; Forty-Seventh Annual Conference for Protective Relay Engineers; GE Protection			
		and Control, Malvern, PA; Dept. of Electrical Engineering Texas A&M University, College Station, Texas			
		C.J. KIM et al; A Parameter-Based Process For Selecting High Impedance Fault Detection Techniques Using Decision Making Under Incomplete Knowledge; Journal IEEE Transaction on Power			
		Delivery, Vol. 5, No. 3, July 1990; Texas A&M University, College Station, Texas 77843			
		C.J. KIM et al; A Learning Method For Use In Intelligent Computer Relays For High Impedance Faults; Journal IEEE			
		Transactions on Power Delivery, Vol. 6, No. 1, January 1991; Texas A&M University, College Station, Texas 77843			
		C.J. KIM et al; High-impedance fault detection system using an adaptive element model; Journal IEEE Proceedings-C, Vol. 140, No. 2, March 1993; Department of Electrical Engineering, Texas			
		A&M University, College Station, Texas 77843			
		RON PATTERSON; Signatures and Software Find High-Impedance Faults; IEEE Computer Applications in Power, July 1995			
		CARL L. BENNER et al; Practical High-Impedance Fault Detection on Distribution Feeders; IEEE Transactions on Industry Applications, Vol. 33, No. 3, May/June 1997			
				T <sup>2</sup>	

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		DAVID C. YU et al; An Adaptive High and Low Impedance Fault Detection Method; Journal IEEE Transactions on Power Delivery, Vol. 9, No. 4, October 1994; University of Wisconsin-Milwaukee			
		Milwaukee, WI 53201; Puget Sound Power & Light Company, Bellevue, WA 98004			
		B. MICHAEL AUCOIN et al; High Impedance Fault Detection Implementation Issues; Journal IEEE Transactions on Power Delivery, Vol. 11, No. 1, January 1996; Texas A&M University,			
		College Station, TX 77843; Rochester Gas and Electric, Rochester, NY 14649			

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